

MULTIMEDIA



UNIVERSITY

STUDENT ID NO

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MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 1, 2018 / 2019

PBC0016–BASIC COMPUTING AND PROGRAMMING (Foundation in Engineering)

17 OCTOBER 2018
9.00 a.m. - 11.00 a.m.
(2 Hours)

INSTRUCTIONS TO STUDENT

1. This question paper consists of **FOUR** printed pages with **FOUR** questions.
2. Answer **ALL** questions.
3. Write your answers in the Answer Booklet.

QUESTION 1

- (a) Define the term, digital literacy. Why is it important to be digitally literate?
[2 + 2 marks]
- (b) Smartphone is a mobile phone with more advanced computing capability and connectivity than basic feature phones.
(i) Name **TWO (2)** popular operating systems for smartphones.
(ii) In your opinion, can a smartphone replace the need for a desktop? Justify your answer.
[2 + 4 marks]
- (c) Computer uses a binary system to represent data.
(i) Name **TWO (2)** popular coding systems to represent data.
(ii) Briefly explain how a character 'T' is sent from keyboard to computer.
[2 + 4 marks]
- (d) Two popular types of memory in a computer are RAM and ROM.
(i) Define the abbreviations, RAM and ROM. Describe their functions.
(ii) Predict what would happen if RAM stopped working.
[6 + 3 marks]

QUESTION 2

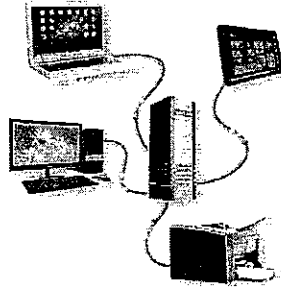
- (a) What is a 'solid state drive' (SSD)? State **TWO (2)** advantages of SSD over magnetic hard disks.
[6 marks]
- (b) Determine a suitable input device for the following:
(i) A pressure-sensitive pointing device that allows a user to control a pointer on the screen.
(ii) A small, flat, rectangular pointing device that is sensitive to pressure and motion.
(iii) A device that uses radio signals to communicate with a tag placed in or attached to an object, an animal, or a person
(iv) An exclusive device used by the banking industry for cheque processing.
[8 marks]
- (c) Distinguish between shareware and open-source software. Give **ONE (1)** example for each of them.
[6 marks]
- (d) A heart beat data is sampled at 120 kHz. If each data is stored in 8 bits, how many bytes of would you need to store 15 minutes of heart beat data?
[5 marks]

Continued

Question 3

- (a) Define the terms: a sending device and a receiving device. Give **ONE (1)** example for each of them.

[6 marks]



Network A



Network B

Figure Q3(b)

- (b) Figure Q3(b) shows two types of network architecture.
- Name and briefly describe Network A and Network B.
 - Discuss advantages and disadvantages of Network B over Network A.
- [4 + 4 marks]
- (c) Briefly describe the following wireless transmission media: 'Broadcast Radio' and 'Cellular Radio'.
- [6 marks]
- (d) How does 'color depth' affect the quality of an image? If a pixel is represented by 32 bits, how many number of colors can be displayed by the pixel?
- [5 marks]

QUESTION 4

- (a) Determine whether the following variable names are valid in the C Programming language and state the reason if they are invalid.
- [6 marks]
- | | |
|-------------|---------------|
| (i) NTV7 | (iv) Money\$ |
| (ii) double | (v) 789number |
| (iii) Float | (vi) _1234 |
- (b) Write the following expression in C statements:
- Declare a variable **price** and assign it to value 58.90.
 - Print the statement "The original price of this book is RM58.90", where 58.90 is the value stored in the variable **price** declared above.
 - Print the discounted price of the book, assuming the discount offer is 10%.

[6 marks]

Continued

(c) Determine the output of the following program.

[5 marks]

```
#include<stdio.h>

int main()
{
    int i;

    for (i=100; i>5; i/=2){

        printf("Counter is %d\n",i);

        if (i%2 != 0)
            printf("Life is great!\n", i);

        else if (i >= 50)
            printf("%I Love Programming\n",i);

        else
            printf("%d\n",i+5);
    }
    return 0;
}
```

(d) Write a complete C program to calculate the volume of two cones. The program prompts the user to enter the radius and height of the cones. Then the program will display the volume of each cone and the total volume of two cones. The sample output is as shown in Figure Q4(d).

(Note: The volume of a cone is given by the formula $V = \frac{1}{3}\pi r^2 h$, where h and r are the height and radius of the cone, respectively)

```
Please enter radius and height of cone 1: 5 2
Please enter radius and height of cone 2: 4 4

Volume of Cone 1 = 51.81
Volume of Cone 2 = 66.32
The total volume is 118.13
```

Figure Q4(d): Sample Output (**Bold and underlined** denotes user's input)

[8 marks]

End of Paper

